



Stantec

Planning Study Report for
MERRITT DRIVE IMPROVEMENTS
(From I-40 Bridge to High Point Road)
Greensboro, NC

FOR:

City of Greensboro
Department of Transportation

BY:

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July 2002

PLANNING STUDY REPORT

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1.0 Project Introduction

1.1 STUDY AREA

Merritt Drive currently connects Wendover Avenue to Frazier Road south of High Point Road. The speed limit for the length of the corridor is 35 mph. Classified as a minor thoroughfare, Merritt Drive facilitates north-south traffic flow across the I-40 corridor in central Greensboro. The study area for this project includes the segment of Merritt Drive from the I-40 bridge south to High Point Road. The proposed improvements in this report, in conjunction with an earlier widening of the bridge over I-40 and Merritt Drive to the north, will help increase traffic capacity on a critical link between Wendover Avenue and High Point Road. The project study area is shown in Exhibit 1.1.

1.2 PROPOSED ACTION

This project involves widening of Merritt Drive from the south end of the bridge over I-40 to High Point Road from three to five lanes. The proposed cross-section includes sidewalks and curb and gutter on both sides of the street. Improvements at the intersection of Merritt Drive and High Point Road to provide additional turn lanes were also addressed in this study.

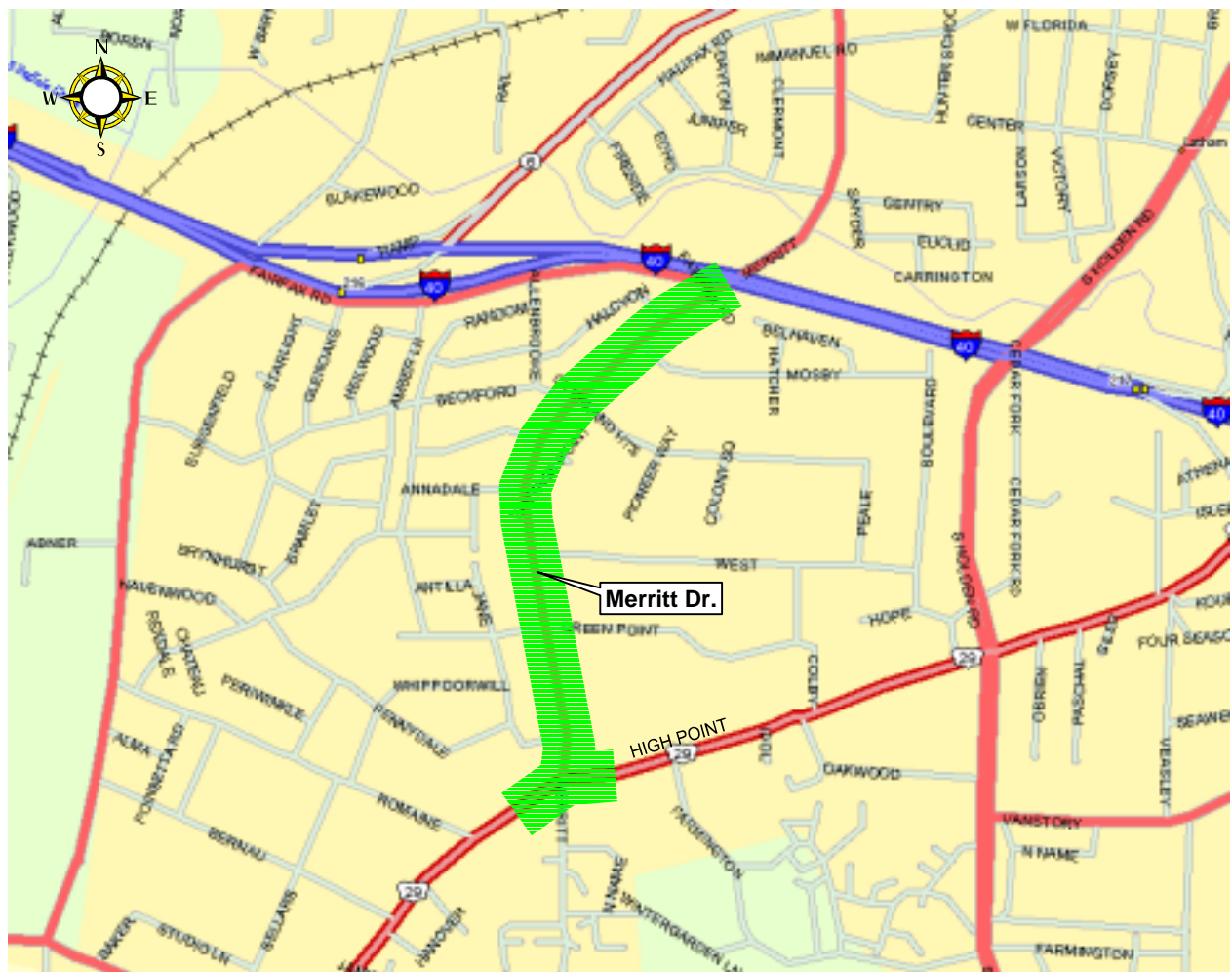
1.3 PURPOSE AND NEED OF PROJECT

The purpose and need for this project is to address the following goals along Merritt Drive:

- To better accommodate increasing traffic by providing additional capacity;
- To enhance safety and reduce traffic accidents; and
- To increase pedestrian safety for the entire corridor by providing sidewalk facilities on both sides of the roadway.

MERRITT DRIVE IMPROVEMENTS

Exhibit 1.1. Project Study Area and Location Map



City of Greensboro,
North Carolina



2.0 Study Methodology

2.1 DATA COLLECTION

Merritt Drive serves as a minor thoroughfare in central Greensboro between Wendover Avenue and Spring Garden Street to the north and High Point Road to the south. The street crosses over I-40 near its midpoint. The project area is primarily residential in nature, with commercial properties sited near the High Point Road intersection. Single-family detached residences make up the majority of the neighborhood along and just off Merritt Drive, with several apartment complexes on the east side of the street near the northern end and middle of the project area. A number of churches are also located along the corridor. Several local streets provide access to and from the area neighborhoods to Merritt Drive including Jane Street, Greenpoint Drive, West Avenue, Annadale Drive, Bramlet Place, Beckford Drive, Overland Heights, Mosby Place, Halcyon Street, and Fairfax Road.

A site visit and research on the current conditions on Merritt Drive provided the following information:

- According to 1998 traffic counts, the average daily traffic is approximately 14,700 vehicles for the studied segment. Projections for Year 2005 estimate traffic volumes of approximately 17,500 vehicles a day. A planning-level capacity for a three-lane roadway is approximately 16,900 vehicles a day.
- From 1998 to 2001, 141 crashes were reported in the project area, with 5 or more near the intersections with High Point Road, Jane Street, West Avenue, Annadale Drive, Beckford Drive, and Fairfax Avenue. Most (81%) involved two vehicles due to 1) a failure to reduce speed causing rear-end collisions (43%) or 2) drivers entering/exiting the roadway failing to yield the right-of-way to other traffic (38%). Damages incurred in the crashes over the reported period averaged \$4,150 per incident.
- Sight distance problems exist for vehicles approaching Annadale Drive where the roadway crests a hill in the middle of a curve.
- Most utilities are located on the east side of the street—overhead electric lines, telephone lines, and underground water—but the overhead wires frequently cross the street to residences and side streets.
- Homes on the east side of Merritt Drive are situated very close to the roadway at the south end of the project, as well as homes on both sides from West Avenue to Bramlet Drive and homes on the northwest side near Mosby Place to Fairfax Road.

2.2 ENVIRONMENTAL SCREENING

In reviewing the potential obstacles to improving Merritt Drive, the field survey and research uncovered only minimal concerns. As mentioned in the previous section, several churches are located along the corridor. One commercial gas station is located on the west side of Merritt Drive at High Point Road, but should have only minimal right-of-way impacts with no disturbance to underground storage tanks.

No environmental areas of concern were found in the area; no streams or rivers cross the project. Research at the State Historic Preservation Office found no historic architectural or archaeological sites located in the project area.

2.3 INITIAL DESIGN CONCEPT

Based on the data collected and recommendations of the Greensboro Department of Transportation staff, an initial design concept for the improvements to Merritt Drive was developed to incorporate the desired design elements and to minimize impacts to the surrounding neighborhoods.

The first conceptual plans show Merritt Drive with a 58-foot (face-to-face), five-lane section with curb and gutter, utility strips, and sidewalks on both sides of the street. The roadway portion would consist of four 11-foot through lanes and a 10-foot two-way, left-turn center lane along with 2.5-foot curb and gutter along both sides. At the back of curb, a 2.5-foot utility/planting strip and 5-foot sidewalk will be provided for the length of the corridor. The roadway alignment would roughly follow the centerline of the current street, with certain sections shifting the centerline as much as seven feet to lessen impacts to residential properties. The areas most affected by the centerline shift would be near Mosby Place where the offset would be five feet to the southeast and short sections near Greenpoint Drive and West Avenue where the offset would range from four to seven feet to the west. Property impacts on individual properties would range 14 to 24 feet beyond the existing edge of pavement.

In addition to the widening and installation of sidewalks, the design also incorporates intersection improvements at High Point Road. The primary improvement would be the addition of a second left-turn lane on eastbound High Point Road for vehicles turning onto northbound Merritt Drive. The new lane would have approximately 240 feet of storage for turning vehicles and was added by shifting the eastbound lanes to the south. This shift would affect the

alignment of these lanes for approximately 500 feet approaching and exiting the intersection. The realignment of the lanes would also create space for a second left-turn lane on the westbound approach, but there is currently only one receiving lane on southbound Merritt for the turn movement. A 490-foot long concrete median will be erected in this space during construction. A four-foot wide median would also be added on Merritt Drive to the north to separate left-turning vehicles from oncoming traffic. This median will extend 260 feet—the length of the Merritt Drive segment between High Point Road and Jane Street—and would bulb out near the Jane Street end.

2.4 PUBLIC INVOLVEMENT

Two public informational workshops were held to inform and involve the citizens of the project area in the planning study. The first was conducted on February 7, 2002, from 5:30 to 7:30 PM in the choir room of Hunter Hills Baptist Church, located at 1806 Merritt Drive. This workshop was an informal drop-in session and members of the project team were present to answer questions and receive comments. Two copies of the design concept were displayed and citizens were able to review each as well as typical cross-sections, photo renderings, and other project information. The project staff also gave a short presentation followed by a question-and-answer session. Workshop participants brought up issues including the present and planned curb design at Annadale Drive, concerns with sidewalks on both sides of the street, the relocation of mailboxes, cut-through traffic in the neighborhood where Merritt Drive ends to the south of the project area, and the increased volumes of tractor trailer and beer trucks along the corridor. Comments were received by conversation with citizens and through written comments from the public received at the meeting and by mail or email afterwards. The following are examples of the written comments received after the workshop:

Concerns over property impacts

- “...I have lived at this location for 34 years and with intentions of being here the rest of my life. Needless to say it was a shock to go to the meeting and find out the city wanted 25 feet of my frontage... I believe the road could be shifted so that both sides of the street could share equally and the city could preserve at least one of my big oak trees which have always been part of the beauty of Merritt Drive...”
- “...I have very little frontage at my house, if any is taken the street will be at my door. It will be unsafe for me to get in or out...”

Concerns over sidewalks

- “...When I received your letter informing me of the plan to put a sidewalk on both sides of the street I felt that it wasn't necessary... Merritt Drive is already a very busy street and

traffic is sure to increase when it goes to 5 lanes. The fact that the street will be busier, thus much (more) dangerous, as well as the gas fumes do not promote walking but discourages it... I also enjoy walking for exercise, but I do not feel it is physically healthy to walk under dangerous situations that busy streets promote..."

- "...I feel that the plan for a sidewalk on both sides of the street is unnecessary...putting a sidewalk will allow traffic to be within a few inches of my retaining wall—which was built assuming the same amount of frontage would be taken from both sides of the street..."

Concerns about noise

- "...Since Merritt Drive was widened the first time..., the noise factor increased to the point of effecting our being able to sleep at night...with an increase of still more traffic and large trucks that noise level will again increase, and again will effect our sleep at night..."

Other comments

- "Need bus route down Merritt Dr. from Patterson to [High Point] Road... Much of the foot traffic down Merritt could be eliminated with a bus route..."
- "...The proposed island in front of my store would completely stop customers entering my property heading towards High Point Road... Please reconsider the island..."

A second informational workshop was held on March 28, 2002, to present the recommended design concept, as revised based on public comments. The development of the recommended design concept is described in *Section 2.5* and its design in *Section 3.1*. Along with issues brought up during and after the first workshop, citizens also had questions or comments about property assessments, construction timing, future stoplight locations, speed bumps and other traffic calming measures, and possible truck restrictions for Merritt Drive. Only one comment was received after the second workshop; an anonymous citizen addressed the fairness of placing sidewalks on both sides of the street.

2.5 DEVELOPMENT OF RECOMMENDED DESIGN ALTERNATIVE

The project staff received comments from the first workshop for a period of two weeks following the workshop. Area residents and concerned citizens provided eight written responses expressing issues with property impacts, sidewalks, noise impacts, and safety as well as various other specific concerns and opinions. A project team meeting was held in mid-March to discuss all the comments; revisions to the original design concept were made if possible to address valid concerns. Based on the written comments as well as conversations with area residents at the first workshop, in office visits, and in phone calls, the GDOT staff decided to reduce impacts to property owners by reducing the through lane width to ten feet, therefore reducing the overall roadway width four feet. GDOT also recommended shifting the centerline

to the east near Mosby Place, Annadale Drive, and on the section between West Avenue and Jane Street to further reduce impacts or alleviate frontage issues. Minor changes were made to the median designs at the High Point Road intersection. Details of the revisions are described in *Section 3.1*.

3.0 Recommended Design Alternative

3.1 FUNCTIONAL DESIGN

Exhibit 3.1 shows the functional design for the recommended alternative and the typical cross-sections are shown in Exhibit 3.2.

The recommended conceptual plans include a 54-foot (face-to-face), five-lane section with curb and gutter, utility strips, and sidewalks on both sides of the street. The roadway portion will consist of four 10-foot through lanes and a 10-foot two-way, left-turn center lane along with 2.5-foot curb and gutter along both sides. At the back of curb, a 2.5-foot utility/planting strip and 5-foot sidewalk will be provided for the length of the corridor. The roadway alignment will roughly follow the centerline of the current street, with certain sections shifting the centerline as much as seven feet to lessen impacts to residential properties. The areas most affected by the centerline shift will be near Mosby Place where the offset will be seven feet to the southeast and short sections near Greenpoint Drive and West Avenue where the offset will range from two to five feet to the west. Property impacts on individual properties range 10 to 24 feet beyond the existing edge of pavement. These impacts are approximate and are based on functional roadway design plans. Actual impacts will be determined upon completion of detailed surveys and construction plans.

As discussed in *Section 2.2*, the design also incorporates intersection improvements at High Point Road. The design includes the addition of a second left-turn lane on eastbound High Point. The new lane will have approximately 240 feet of storage for turning vehicles and will be added by shifting the eastbound lanes to the south. This shift will affect the alignment of these lanes for approximately 500 feet approaching and exiting the intersection. The realignment of the lanes will also create space for a second left-turn lane on the westbound approach, but there is currently only one receiving lane for the movement. A 490-foot long concrete median will be erected in this space during construction. A four-foot wide median will also be added on Merritt Drive to north to separate left-turning vehicles from oncoming traffic. The median will extend 260 feet from the stop bar for the southbound approach at High Point Road back to Jane Street. The final design will not include a bulb-out near the Jane Street end.

3.2 COST ESTIMATE

The following table outlines the estimated project costs for right-of-way acquisition and construction:

Table 3.1 Estimated Cost for Recommended Design Concept

	Unit Cost	Estimated Units	Cost
Right-of-Way Costs*			\$365,414
Residential Single-Family	\$1.25/sq. ft.	52,709	\$65,886
Residential Multi-Family	\$1.75/sq. ft.	20,204	\$35,357
Other (Commercial, etc.)	\$5.00/sq. ft.	15,566	\$77,828
Administration/Acquistion/Relocation	40% total right-of-way cost		\$71,628
Utility Relocation	\$120,750/mile	0.95	\$114,715
Construction Costs			\$2,482,490
<i>Widening</i>			
3-lane to 5-lane c&g	\$1,000,000/mile	0.95	\$950,000
<i>Other Construction Costs</i>			
Additional turn lanes at High Pt. Rd.	\$200/lin. ft.	1,050	\$210,000
Sidewalks, 2 sides	\$230,000/mile	0.95	\$218,500
Water/Sewer Relocation	\$69.00/lin. ft.	5,050	\$348,450
Contingency	15% total construction cost		\$259,042
Preliminary Engineering/Overhead	25% total construction + contingency cost		\$496,498
TOTAL COST			\$2,847,904

* Assumes damages only; does not include any relocations

Exhibit 3.1 Functional Design of Recommended Alternative

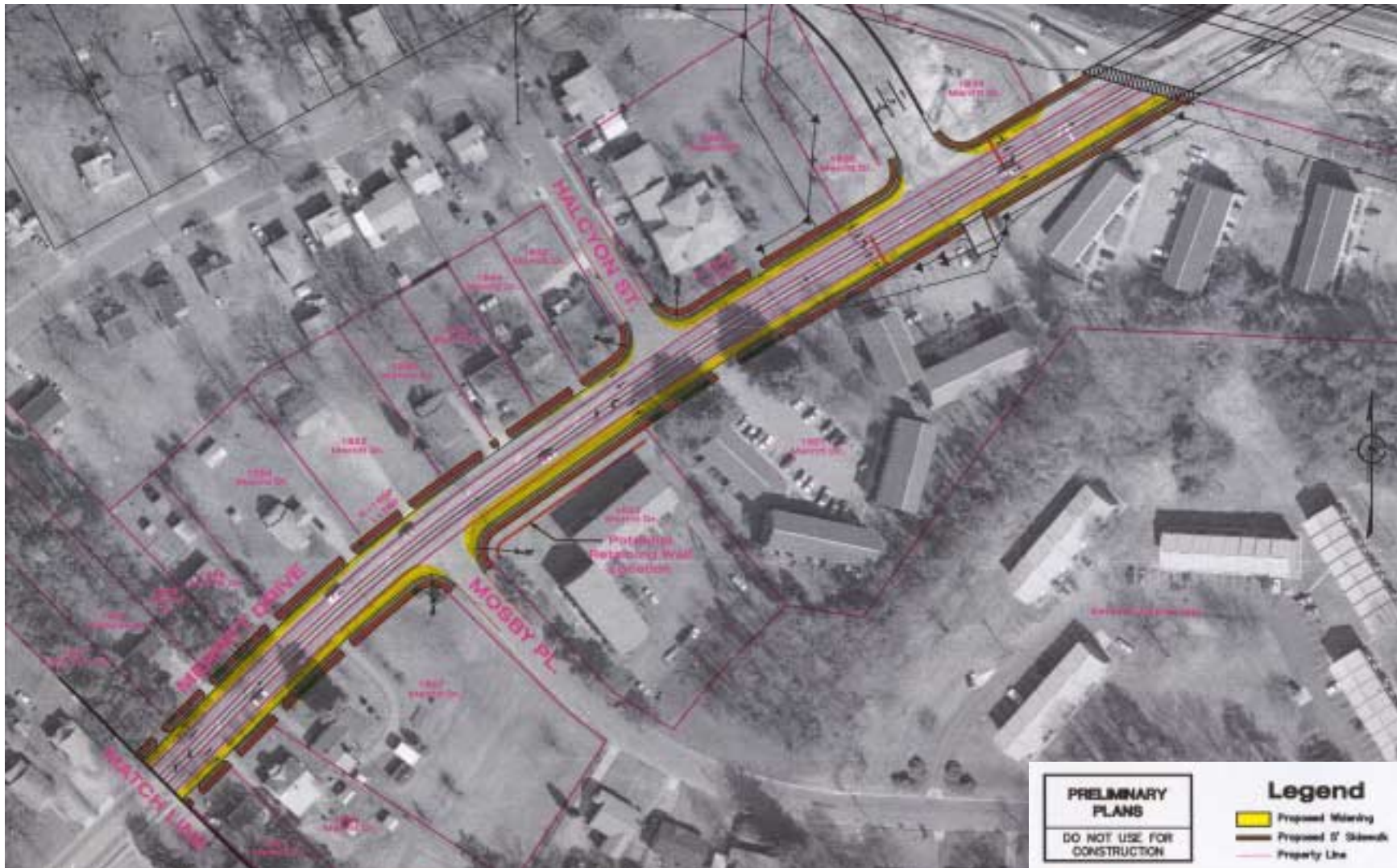
This map shows the functional design submitted May 2002. The functional design is available for review at the Greensboro Department of Transportation on maps at a scale of 1 in. = 50 feet.

Exhibit 3.1 Functional Design of Recommended Alternative (continued)

This map shows the functional design submitted May 2002. The functional design is available for review at the Greensboro Department of Transportation on maps at a scale of 1 in. = 50 feet.

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Exhibit 3.1 Functional Design of Recommended Alternative (continued)

This map shows the functional design submitted May 2002. The functional design is available for review at the Greensboro Department of Transportation on maps at a scale of 1 in. = 50 feet.

Exhibit 3.2 Typical Cross-sections of Recommended Alternative